

**Notice of Allowability**

Application No.

09/668,027

Applicant(s)

JENNINGS, WILLIAM T.

Examiner

Taghi T. Arani, Ph.D.

Art Unit

2131

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to 7/23/2004.
2. ☒ The allowed claim(s) is/are 1-10 and 12-27.
3. ☒ The drawings filed on 21 September 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 7/30/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

*E. Moise*  
EMMANUEL L. MOISE  
PRIMARY EXAMINER

## DETAILED ACTION

### *Examiner's Statement of Reasons for Allowance*

Claims 1-10, 12-27 are allowed over prior art.

The following is an examiner's statement of reasons for the indication of allowable claimed subject matter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Closest prior art of record directed to Kornerup discloses a multiplier having cells that provide for the interleaving of multiplication and modulo reduction (Kornerup, page 892, column 2, paragraph 3.). The cells perform a multiplication operation according to:

Algorithm MM.

for 1 := 0 to n do

L1 :  $q_i := S \bmod 2$  ;

L2:  $S := (S + q_i m) \div 2 + b_i A$  . ;

end;

Return S

(Kornerup, page 895, column 1, paragraph 4.) Kornerup, however, fails to disclose, teach or suggest, an input-to-output transfer relationship for the coupled cells (transfer functions) as recited in independent Claims 1, 5, 13 and 18.

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Independent Claims 22 and 25 recite certain limitations substantially similar to those recited in independent Claims 5 and 18.

Kornerup fails to disclose a concurrent reduction cell (recited in independent claim 9) comprising:

- a first full adder receiving a first input signal, a second input signal, and a clock signal;

- a second full adder receiving an output of the first full adder, a third input signal, and a clock signal;

- a first storage circuit coupled to an output of the first full adder and an input thereto;

- a second storage circuit coupled to an output of the second full adder and an input thereto;

- a third storage circuit coupled to an output of the first full adder and providing an output; and

- a fourth storage circuit coupled to the second storage circuit and the second full adder.

Dependent Claims 2-4, 6-8, 10, 12, 14-17, 19-21, 23-24, 26-27 are also allowed by virtue of their dependencies.

None of the prior art of record, either taken by itself or in any combination, would have anticipated or made obvious the invention of the present application at or before the time it was filed.

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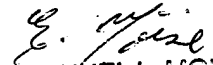
### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taghi T. Arani whose telephone number is (571) 272-3787. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Taghi T. Arani, Ph.D.  
Examiner  
Art Unit 2131

  
EMMANUEL L. MOISE  
PRIMARY EXAMINER